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U.S. Department of Transportation
Urban Mass Transportation Administration

National Ridesharing Demonstration Program: Regional Rideshare Promotion in North Carolina

UMTA/TSC Evaluation Series

Final Report
September 1985

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16. Abstract

This case study reports on a multi-jurisdictional ridesharing program centered in the Piedmont Crescent area of North Carolina, funded under the National Ridesharing Demonstration Program. The Crescent encompasses three metropolitan areas: the Triangle area of Raleigh, Durham and Chapel Hill; the Metrolina area centered in Charlotte; and the Triad, comprised of Greensboro, High Point and Winston-Salem.

The demonstration was most useful in its development and exploration of the appropriate institutional or organizational structure to accomplish regional/intercity ridesharing. The report is largely devoted to documenting these various arrangements, and the methods they employed. Arrangements varied in their effectiveness based largely on size of staff and the experience, talent and commitment of the coordinators. Local support of employers and institutions was also important. The North Carolina Department of Transportation was instrumental in fostering cooperation and coordination among the regions. The demonstration's impact on actual ridesharing behavior is not well documented.

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PREFACE

This report was prepared by COMSIS Corporation under contract to the Transportation Systems Center (TSC) of the U.S. Department of Transportation. The report concerns a demonstration of ridesharing institutional development in the Piedmont Crescent region of North Carolina. The project was funded by the Federal Highway Administration (FHWA), the Urban Mass Transportation Administration (UMTA), and the Office of the Secretary of Transportation (OST), under the National Ridesharing Demonstration Program. Evaluation of the project was performed by the Transportation Systems Center and its contractor, COMSIS Corporation, under the sponsorship of UMTA's Service and Methods Demonstration Program.

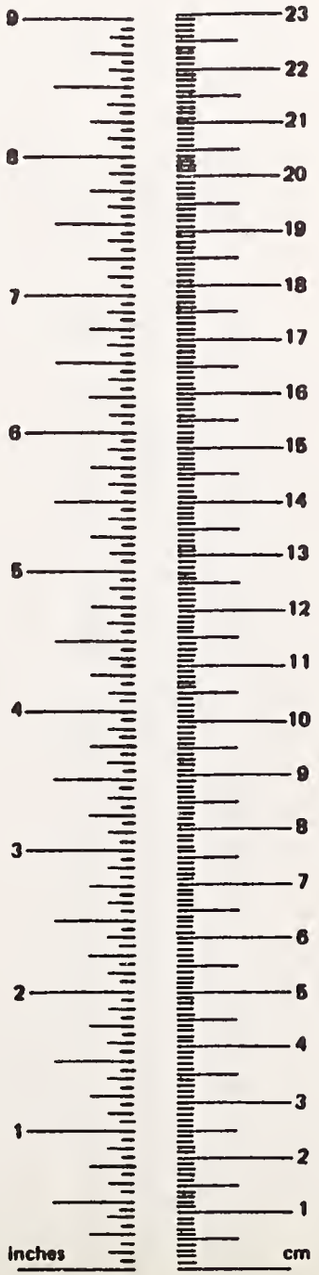
The author of the report is David Rubin, who served as Project Manager for COMSIS. COMSIS acknowledges the assistance of several individuals in the preparation of this report. Mr. Joel Freilich, Evaluation Manager for TSC, contributed valuable assistance in the organization and content of the report. Thanks are extended to the staff of the North Carolina Department of Transportation, especially Mary Neely Clayton, for their help, patience, and support of our attempt to document a complex, multi-agency process. Thanks also to the ridesharing coordinators in the Triangle, the Triad, and Metrolina for their efforts to keep records, for their quarterly reports, and for their help in preparing this report. Any errors or misrepresentations are, of course, the responsibility of the author.

METRIC CONVERSION FACTORS

Approximate Conversions to Metric Measures

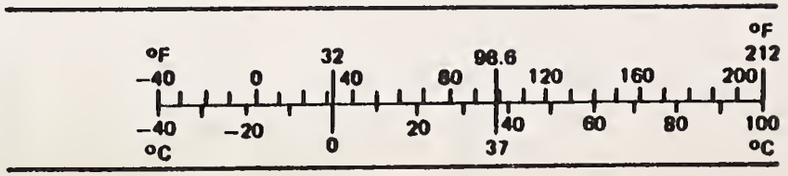
Symbol	When You Know	Multiply by	To Find	Symbol
		LENGTH		
in	inches	*2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
		AREA		
in^2	square inches	6.5	square centimeters	cm^2
ft^2	square feet	0.09	square meters	m^2
yd^2	square yards	0.8	square meters	m^2
mi^2	square miles	2.6	square kilometers	km^2
	acres	0.4	hectares	ha
		MASS (weight)		
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons (2000 lb)	0.9	tonnes	t
		VOLUME		
tsp	teaspoons	5	milliliters	ml
Tbsp	tablespoons	15	milliliters	ml
fl oz	fluid ounces	30	milliliters	ml
c	cups	0.24	liters	l
pt	pints	0.47	liters	l
qt	quarts	0.96	liters	l
gal	gallons	3.8	liters	l
ft^3	cubic feet	0.03	cubic meters	m^3
yd^3	cubic yards	0.76	cubic meters	m^3
		TEMPERATURE (exact)		
°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

*1 in. = 2.54 cm (exactly). For other exact conversions and more detail tables see NBS Misc. Publ. 286, Units of Weight and Measures. Price $2.25 SD Catalog No. C13 10 286.



Approximate Conversions from Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
		LENGTH		
mm	millimeters	0.04	inches	in
cm	centimeters	0.4	inches	in
m	meters	3.3	feet	ft
m	meters	1.1	yards	yd
km	kilometers	0.6	miles	mi
		AREA		
cm^2	square centimeters	0.16	square inches	in^2
m^2	square meters	1.2	square yards	yd^2
km^2	square kilometers	0.4	square miles	mi^2
ha	hectares (10,000 m^2)	2.5	acres	
		MASS (weight)		
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	tonnes (1000 kg)	1.1	short tons	
		VOLUME		
ml	milliliters	0.03	fluid ounces	fl oz
l	liters	2.1	pints	pt
l	liters	1.06	quarts	qt
l	liters	0.26	gallons	gal
m^3	cubic meters	36	cubic feet	ft^3
m^3	cubic meters	1.3	cubic yards	yd^3
		TEMPERATURE (exact)		
°C	Celsius temperature	9/5 (then add 32)	Fahrenheit temperature	°F



CONTENTS

Section		Page
1.	INTRODUCTION	1
2.	SITE DESCRIPTION	5
	2.1 Triangle	5
	2.2 Triad	7
	2.3 Metrolina	8
	2.4 Government Structure, Regional Planning and Ridesharing	8
3.	DEMONSTRATION GOALS	10
4.	DEMONSTRATION STAFFING	12
5.	INSTITUTIONAL ARRANGEMENTS	14
6.	PROGRAM ACTIVITIES	21
	6.1 Marketing and Education Program	21
	6.2 Employer Contacts	25
	6.3 Matching Activities	27
	6.4 Park-and-Ride Lots	32
7.	RELATIONSHIP TO PUBLIC TRANSPORTATION	35
8.	PROJECT COSTS	36
9.	CONCLUSIONS AND TRANSFERABILITY	41

LIST OF ILLUSTRATIONS

Figure		Page
1	PIEDMONT CRESCENT, NORTH CAROLINA	2
2	RECORDED ACTIVITY - PIEDMONT CRESCENT RIDESHARING	30

LIST OF TABLES

Table		Page
1	PIEDMONT CRESCENT POPULATION.....	6
2	ANNUAL DISTRIBUTION OF ACTIVITY OF PIEDMONT CRESCENT RIDESHARING PERSONNEL.....	17
3	TRI-A-RIDE MARKETING SURVEY RESULTS.....	22
4	EMPLOYER CONTACTS AS REPORTED BY RIDESHARING COORDINATORS.....	26
5	RECORDED ACTIVITY.....	28
6	SUMMARY OF EXPENDITURES.....	37

EXECUTIVE SUMMARY

The North Carolina Ridesharing Demonstration was a complex, multi-jurisdictional program that developed an institutional framework for ridesharing in the urbanized heart of North Carolina. The site of the demonstration was the Piedmont Crescent, a crescent-shaped region extending from Raleigh to Charlotte. With funding from the National Ridesharing Demonstration Program (NRDP), regional ridesharing programs were developed or embraced in the three metropolitan areas, each with a different institutional structure. These areas were the Triangle Region (Raleigh, Durham, and Chapel Hill), Metrolina (Charlotte), and the Triad region (Greensboro, High Point, and Winston-Salem). Through a single employee, the North Carolina Department of Transportation coordinated the varied activities in the three regions, and provided marketing support. Individual programs emphasized marketing and education, park-and-ride/carpool staging lot development, employer contacts, and traditional rideshare matching.

Organization of the respective programs was the focal issue of the evaluation. The Triangle region chose to consolidate three city ridesharing programs into one regional program, administered by the Triangle J* Council of Governments, staffed with a coordinator and a matchmaker--a largely clerical employee responsible for coding and data processing. Metrolina had a single county-based program staffed with a coordinator, an assistant, and a secretary/matchmaker. The Triad region maintained a program with three coordinators, one in each of its three cities.

The effectiveness of these institutional arrangements varied. In the Triad region, Greensboro's coordinator proved to be a natural salesman, and met with enthusiastic response from employers. Other coordinators in the Triad had less success in obtaining employer cooperation. In general, this arrangement achieved less staff specialization, but closer contact with employers. Metrolina best employed staff specialization, with

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*North Carolina designates planning districts by letter. The Triangle Council of Governments is district "J".

the coordinator handling budget and administration, the assistant devoting her time largely to marketing, and a clerk doing most of the matching. The Triangle was the slowest to develop an effective institutional arrangement. Its three cities were reluctant to give up control of their programs; the new staff felt everything should be in order and marketing material completed before marketing calls were made. They spent considerable time and effort on the materials, creating perhaps the best graphics produced by any of the North Carolina projects.

The regional coordinators, with guidance from the state, overcame their initial lack of cooperation and coordination and became an effective team. They joined forces on large surveys, shared marketing ideas, trained each other, and presented a unified voice to state and federal officials. The coordinators ran their own programs, with support from the state. The state provided some funding and used persuasion to modify programs that were not well planned or that required coordination among regions.

The demonstration's impact on ridesharing behavior is not well documented, but the level of activity was generally high. The impact of a marketing campaign in the Triangle was the subject of a telephone survey which showed an increase from 19 to 22 percent in awareness of the program after the campaign. Metrolina evaluated park-and-ride lots by documenting the carpool size and trip length characteristics of parkers. The state, with help from R.J. Reynolds Tobacco Co., produced a movie to help market ridesharing. The film was well received.

The North Carolina ridesharing demonstration cost about $400,000 for the two years it operated, amounting to about 10 person years of effort. Because accurate data on the number of ridesharing arrangements produced by the program are unavailable, it is impossible to draw conclusions regarding the effectiveness of the program expenditures. The lack of data from which to assess program matching effectiveness is the result of a conscious decision to evaluate the institutional arrangements unique to the North Carolina demonstration, leaving the issue of travel behavior impacts to several other NRDP evaluations.

1. INTRODUCTION

The U.S. Department of Transportation developed the National Ridesharing Demonstration Program (NRDP) to encourage and study comprehensive and innovative approaches to ridesharing. Demonstrations were evaluated at seventeen sites, representing a range of locational, size, and development contexts. "Ridesharing," in the context of these evaluations, is travel in a motor vehicle by more than one person. The driver is either not compensated or compensated nominally, and the vehicle is owned or leased by the driver for personal use or by an institution for the use of its employees. This definition includes carpools, vanpools, and even bus pools, but not subscription bus services. The program was funded jointly by the Federal Highway Administration, the Urban Mass Transportation Administration, and the Office of the Secretary of Transportation. The Transportation Systems Center, a research and development organization within the U.S. Department of Transportation, has responsibility for the evaluation. Local grant recipients are responsible for program planning and administration, and for evaluation support, principally data collection.

The NRDP demonstrations vary in scope from small projects, intended to demonstrate a single ridesharing concept, to complex projects covering multiple jurisdictions and concepts. The North Carolina Demonstration, falling in the latter category, has been a demonstration of the development of an institutional framework for ridesharing in a multi-city region. North Carolina's Piedmont Crescent, an urbanized corridor that extends from Raleigh in the northeast through a crescent shape to Charlotte in the southwest (Figure 1), encompasses seven cities in three urban areas. Each jurisdiction has its own county and metropolitan institutional framework.

This report addresses several issues of national interest, including organization for intercity ridesharing; the institutional framework for ridesharing within a state; the role of "regional coordinators" as marketing, administrative, image-building, and coordinating personnel; the uses of media, and

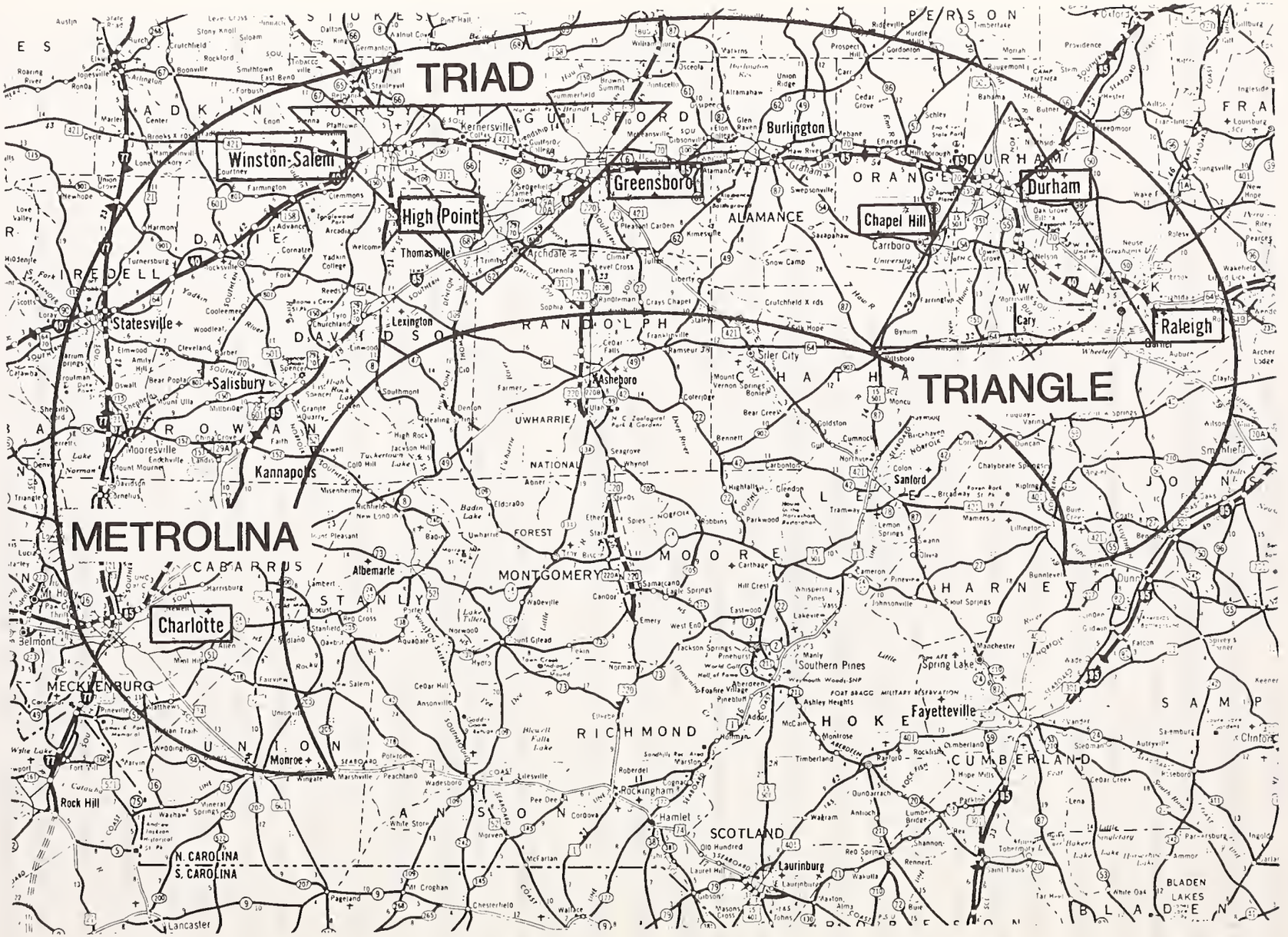

Figure 1

Piedmont Crescent, North Carolina

place of ridesharing in metropolitan transportation planning, and the use of park-and-ride lots to encourage ridesharing. Both carpool and vanpool formation were attempted, with matching efforts targeted at specific clusters of employers, scattered employers, employees, potential park-and-ride lot users, and the general public.

Because the North Carolina project was so diffuse in terms of the number of sites, actors and the ridesharing strategies attempted, this evaluation does not attempt to detail the impact of all facets of the demonstration. In particular, measurements of changes in ridesharing were not made, nor was detailed information obtained from ridesharers or the general public. Hence, there is no information on carpool formation rates, carpool tenure, or satisfaction with the service. Rather, the emphasis has been placed on the institutional arrangements that evolved at the various sites and the organizational mechanisms that were used to define and carry out program objectives. Through the use of daily logs and diaries, the activities of the ridesharing coordinators in each agency have been studied and compared. The level of effort devoted to rideshare matching activity is specifically discussed.

One of the more interesting aspects of this demonstration is the comparison of the regions, particularly between Triangle and Triad, regarding the term and success of the respective programs. These two metropolitan regions are similar in size, structure, and economy, but are very different in their institutional approach to ridesharing. The Triangle region (Raleigh, Durham and Chapel Hill) chose a metropolitan approach, with a regional coordinator housed in the metropolitan planning agency and serving the three communities, while the Triad (Greensboro, High Point and Winston-Salem) chose three separate coordinators, working together, but housed in three separate city agencies. The results were different, and this evaluation examines the reasons for the differences and the relative advantages of each approach.

The remainder of this report, which describes the activities and institutions of the North Carolina ridesharing demonstration, is organized as follows:

- Chapter 2 presents a description of the site;
- Chapter 3 discusses the demonstration goals;
- Chapter 4 discusses the demonstration staffing;
- Chapter 5 describes the institutional arrangements;
- Chapter 6 describes the actual operation of the program, including organization and program activities;
- Chapter 7 describes the relationship with public transportation;
- Chapter 8 details the project costs, and
- Chapter 9 concludes with a discussion of transferability.

2. SITE DESCRIPTION

North Carolina, located at the eastern end of the Sun Belt, has an established urban structure, strong industrial base, and significant recent growth. Most of the state's urban development is concentrated in three metropolitan areas in the center of the state, all located in the Piedmont Region between the Atlantic Coastal Plain and the southern end of the Appalachian Mountains. The three areas are known locally as the Triangle, the Triad, and Metrolina. The Triangle area consists of Durham, Orange and Wake Counties, including the three major cities of Raleigh, Durham and Chapel Hill. The Triad is composed of Davidson, Forsyth, Guilford, Randolph, Stokes and Yadkin Counties, including the cities of Greensboro, High Point and Winston-Salem. Metrolina includes Mecklenburg, Union and Gaston Counties, clustered around the city of Charlotte. These three areas are shown in Figure 1, and their 1980 populations are shown in Table 1. Each of the three has between one half million and one million residents.

2.1 TRIANGLE

The Triangle is the fastest growing of the three regions that make up the Piedmont Crescent. It consists of two large cities, and one smaller city. Raleigh is the capital of North Carolina, and the state government is the major employer, with over 22,000 employees. Carolina Power and Light is the next largest employer, with 300 downtown employees. North Carolina State University is in Raleigh, and has an enrollment of more than 20,000 students.

Durham is a manufacturing center for textiles, plastics, and tobacco products. It is the home of Blue Cross-Blue Shield of North Carolina and North Carolina Mutual Insurance Company. It is also the home of Duke University, a large private university and medical center with more than 14,000 students.

TABLE 1: PIEDMONT CRESCENT POPULATION
SMSA's, Counties and Major Cities

	1980	1970	Percent Change
METROLINA	**637,218**	**557,785**	**14.2**
Mecklenburg	404,270	354,656	14.0
Charlotte	314,447	241,420	30.2
Union	70,380	54,714	28.6
Gaston	162,568	148,415	9.5
TRIANGLE	**530,673**	**419,254**	**26.6**
Orange	77,055	57,567	33.9
Chapel Hill	32,421	26,199	23.7
Durham	152,785	132,681	15.2
Durham	100,831	95,438	5.7
Wake	300,833	229,006	31.4
Raleigh	149,771	122,830	21.9
TRIAD	**827,385**	**724,129**	**14.3**
Davidson	113,162	95,627	18.3
Forsyth	243,683	215,118	13.3
Winston-Salem	131,885	133,683	-1.3
Guilford	317,154	288,645	9.9
Greensboro	155,642	144,076	8.0
High Point	64,107	63,229	1.4
Randolph	91,861	76,358	20.3
Stokes	33,086	23,782	39.1
Yadkin	28,439	24,599	15.6

Source: U. S. Department of Commerce, Census of Population, 1980. Advance Counts.

Chapel Hill, the smallest of the three cities in the Triangle, is the home of the University of North Carolina (UNC) and is very much a "college town." UNC has 22,000 students in Chapel Hill, its main campus. The UNC Medical Center is the second largest employer. UNC-Chapel Hill is a residential campus, with more students living on campus than commuting. Between Chapel Hill and Raleigh is the Research Triangle Park, a 10,000 acre complex with several large employers, including Burroughs-Welcome, Northrop, Northern Telecom, IBM and the Environmental Protection Agency, with a total of more than 20,000 employees.

2.2 TRIAD

Greensboro is the largest city in the Triad, but not large enough to dominate the economic life. It is the center of the North Carolina textile and fibers industry, with Cone Fibers and Cotton, Burlington Industries, and J.P. Stevens as the largest mills. It is also the home of P. Lorrilard Tobacco, the Pilot Life Insurance Company, Western Electric's Guilford Center, several hospitals including Moses Cone Hospital, the major regional medical facility, and two major educational institutions, Guilford Technical Institute and UNC-Greensboro. The students are largely commuters from the Triad region.

Winston-Salem is the major tobacco city in North Carolina, home of R. J. Reynolds Tobacco, with 14,000 employees. Reynolds has diversified, and its headquarters now house other activities besides tobacco. It is the largest vanpool sponsor in the state, with 44 vanpools in operation. Other major employers include Hanes Industries, the major textile mill, and Western Electric. Piedmont Airlines is also based in Winston-Salem, with a major maintenance facility at the Greensboro/Winston-Salem Airport.

High Point is the smallest of the cities in the Triad, functioning somewhat in the shadow of Greensboro. They are both located in Guilford County. High Point is essentially a one-industry town: furniture. Major employers include Alma Desk and U.S. Furniture industries. Most of the small employers are in

the furniture or woodworking industry as well. Thomas-Built Bus Company is also located in High Point.

2.3 METROLINA

The Metrolina region, unlike the other two, is a metropolitan area with only one city and surrounding suburban developments. The region extends into South Carolina, with significant commuter travel across the state line. Charlotte, the largest city in North Carolina, is the financial and real estate center of the state, the headquarters of all the major utilities, and the transportation hub of the Carolinas. Over twenty-five percent of the region's employment is in the central business district, "Uptown Charlotte." Duke Power and Light is the largest private employer. Southern Bell is the next largest. The city, school system and county are also major employers. Charlotte Memorial Hospital and Medical Center is a regional facility and major employer. The University of North Carolina has a Charlotte campus.

2.4 GOVERNMENT STRUCTURE, REGIONAL PLANNING AND RIDESHARING

Ridesharing as a government activity began in North Carolina in 1972 when the Department of Highways had an intern work with the City of Raleigh to survey city and state employees in an effort to start a carpool program. After the oil embargo, most of the cities in the Piedmont Crescent began small carpool programs, using interns. Charlotte's program did not become formal until 1977. High Point and Winston-Salem had programs described in their transit marketing schemes, but no staff. The state program became essentially a vanpooling program, financed by the North Carolina Department of Energy. The department developed vanpooling legislation, marketing, and promotional activities throughout the state. Local programs concentrated on matching and paid little attention to the potential for vanpooling. The state vanpool program administrator initiated the demonstration request in an attempt to reorient local programs.

The older local programs still resist vanpooling, because of a perception that it distracts from carpooling. The state still has a predilection to emphasize vanpooling, maintaining vanpool inventories and marketing the concept statewide.

North Carolina has a government structure with strong cities. Counties have very little control over transportation. As a result, the cities have historically been the primary actors in the ridesharing process. Given the geography of the Piedmont Crescent, with many small and medium-sized cities and towns within commuting distance of each other, there has always been a significant amount of intercity commuting, while local ridesharing marketing was targeted to the intra-city commuter. The major congestion points in the Triad, for example, are on I-40 where it enters Greensboro and Winston-Salem, with commuters from one city travelling to the other. The State Department of Highways became a Department of Transportation in 1973, and the Public Transportation Division was created with a role in ridesharing. It found an existing structure in the cities and worked with it. Except for Mecklenburg County (Metrolina), which has taken an active role in ridesharing, every county to get involved in a ridesharing program has done so in the context of a city/county planning organization.

Regional planning in North Carolina is the responsibility of Councils of Governments. There is a Council of Governments in each of the three metropolitan regions of the Piedmont Crescent. The Triad has two: Northwest Piedmont COG for the Winston-Salem area, and the Piedmont Triad for Guilford County (both Greensboro and High Point). The COG in the Charlotte area is the Centralina Council of Governments. None of these COG's has played a major role in ridesharing. The Triangle J Council of Governments has become the lead agency for ridesharing in the Triangle region. Triangle J, like the other COG's, is a voluntary association of municipal and county governments, funded by voluntary contributions and without a stable funding source.

3. DEMONSTRATION GOALS

North Carolina DOT initiated its role in this program when it submitted a letter of interest to the Federal Highway Administration on June 11, 1979. This letter specified four goals regarding participation in the National Ridesharing Demonstration Program:

1. **Establish ridesharing as an integral part of the unified transportation planning process.** As part of NCDOT's goal of integrating all modes of transportation into a single transportation planning process, the demonstration was intended to increase the recognition by planners and policymakers that ridesharing was a realistic component of the transportation planning process.

2. **Expand the size and coverage of existing ridesharing programs to match regional commuting patterns.** Because of the regional nature of commuting patterns in the Piedmont Crescent, the demonstration was intended to show that ridesharing programs based on entire regions could be more comprehensive in scope and could more effectively promote ridesharing.

3. **Increase the intra-county peak hour Vehicle Occupancy Ratio (VOR) within the target counties from 1.3 to 1.5. Increase the inter-county peak hour VOR from 1.6 to 1.8.** The demonstration proposal volunteered these specific quantitative goals, although they are difficult to measure and were not backed up with existing base data.

4. **Attack site-specific problems on an employer-by-employer and a corridor-by-corridor basis.** The NCDOT felt that employers should be encouraged to determine their own set of objectives based on the work schedules, origins, destinations, commuting habits, congestion problems and other factors it felt were important. NCDOT also felt that this would work best if it developed as a regional ridesharing program.

Not stated as a goal, but described in detail in the letter of interest, was the encouragement of intercity ridesharing by establishing park-and-ride lots, particularly multipurpose lots.

These would serve both inbound transit users and outbound ridesharing units. A uniform signing system was also proposed in order to provide program identity between regions.

Not described in the letter of interest, but developed as a major goal during the demonstration, was the coordination of ridesharing programs between the Piedmont Crescent and the state. Before the demonstration, no real mechanism existed to coordinate ridesharing activity. The state program concerned itself with vanpools, the local coordinators separately concerned themselves with carpools, and material cooperation did not occur. Preparing the grant application was the first serious cooperative effort.

In addition to goals, the letter of interest also defined specific marketing objectives: 1) to convince employers of the benefits of ridesharing to the firm and 2) to convince employees of the personal benefits of ridesharing. These objectives were to be pursued using workshops, media campaigns and consistent logos and graphics. The state hired a ridesharing marketing director to help meet these objectives.

An important element of the demonstration was the "Special Projects" grants. The state received demonstration funds that were not allocated and distributed them to the regional coordinators based on requests for particular projects. This fulfilled the goal of allowing the regional coordinators to develop innovative ideas and try them out, without rigidity. The special projects were largely in marketing and park-and-ride lot development.

These goals, both stated and unstated, have been the motivation for the participants in the North Carolina Ridesharing Demonstration.

4. DEMONSTRATION STAFFING

A number of people have been involved in ridesharing activities at the state DOT since the first full-time employee was assigned in 1972. A position, initially titled "Vanpool Program Administrator" and ultimately "Ridesharing Coordinator," was created to replace an intern who had had this responsibility. The initial coordinator was replaced in May 1980, after the NRDP demonstration began, by a second individual who resigned after seven months. The successor, who stayed on through most of the ridesharing demonstration, was assisted by the ridesharing marketing coordinator, and both were headquartered within the Division of Public Transportation of the North Carolina DOT. The coordinator was responsible for the overall coordination of the demonstration as well as for marketing and matching outside the Crescent. The marketing coordinator was responsible for overseeing all media efforts throughout the state.

In the Triangle, staff included the director of transportation planning of the Triangle J COG and the ridesharing coordinator. The coordinator had overall responsibility and was assisted by a matchmaker. The director of transportation planning took an active role in ridesharing activities, since a portion of his salary was provided by the demonstration.

In the Metrolina Region, the ridesharing coordinator had been on the job since before the project began, and served throughout the demonstration. Her staff included an assistant coordinator, who assisted in all the coordinator's functions, and a matchmaker/secretary.

Staffing was more complex in the Triad than in the other regions. The Greensboro program was run by a transportation planner until the coordinator was hired in March 1981. A coordinator was hired in Winston-Salem in October 1980, and had two replacements. The Winston-Salem coordinator at the end of the demonstration had been the ridesharing coordinator in High Point, since January 1981. High Point ended the demonstration without a coordinator and did not actively pursue a replacement because of an impending merger with the Greensboro program, which has since

taken place. None of the Triad coordinators had significant clerical help.

5. INSTITUTIONAL ARRANGEMENTS

Before the National Ridesharing Demonstration, the institutional arrangements for ridesharing in North Carolina were ad hoc. The state concentrated on vanpooling, while local jurisdictions, if they had programs, were involved in carpool matching. The North Carolina Department of Energy provided financial incentives. One of the goals of the NRDP demonstration was the coordination and regionalization of the ridesharing program. In response to that goal, the Metrolina program, housed in Mecklenburg County offices, became regional in scope, expanding first to three, and then to fourteen, counties. The three programs in the Triangle--CAP, the Capitol Area Pooling in Raleigh; Bull City Carpool Program in Durham; and CHAPS, the Chapel Hill Area Pooling System--were all consolidated into Tri-A-Ride, a regional program housed in the Council of Governments and serving six counties. The Triad, on the other hand, had no regional institution in which to house a ridesharing program, as there are two Councils of Governments. Therefore, three separate programs were set up, with an agreement to coordinate.

The Triangle program is run by a Council of Governments, a metropolitan planning organization with persuasion as its only base of power. Funded by the voluntary contributions of local governments, it lacks direct ties to most of the local operating agencies and works instead through committees and elected officials. In the Triad, all three programs were originally housed in city operating agencies. The Winston-Salem program was later housed in the Transit District. The differences in expectations and response to activity between operating agencies in the Triad and non-operating agencies in the Triangle had an impact on the effectiveness of the coordinators, as evidenced by the results.

At the beginning of the demonstration, state representatives expressed concern and disappointment at the arrangement in the Triad. They had hoped for a single ridesharing program with one set of graphics, one phone number, and one letterhead, even though the coordinators were to be housed in separate agencies. The early months of the demonstration saw little coordination and

much duplication of effort. Both Winston-Salem and Greensboro proposed studies of I-40 travel independent of each other. Each program designed its own poster. There was not even significant communication between coordinators.

The Triangle program, at that time, was the role model that the state promoted for the Triad. Three programs had been merged, their files combined, and a single entity represented ridesharing in the entire region. The size of Triangle's program permitted specialization, and the coordinator was assisted by a lower-cost matchmaker. Their first year of operation included an excellent (even well documented) advertising campaign.

By the end of the demonstration, the Triad with its less formal organization had more local acceptance than the Triangle. The activity level in the Triad has also been greater than the Triangle in terms of employer contacts, matching surveys completed, and matches. Due primarily to the personality and initiative of the Greensboro coordinator, the two (previously three) coordinators in the Triad had developed a cooperative and symbiotic relationship, with almost daily communication coupled with cooperation in major surveys and media events. On the other hand, dissatisfaction with the ridesharing program operated by the Triangle J Council of Governments resulted in "showdown" meetings at which the three Triangle cities demanded specific accomplishments by certain dates, under threat of withdrawing support for the program. The reasons for this contrast are interesting.

The primary differences between Triad and Triangle were in the skills of the respective ridesharing coordinators and their supervisors. The coordinators in the Triad, especially the Greensboro coordinator, were marketing people. They thrived on "sales calls," filled their quarterly reports with successful employer contacts, and appeared to enjoy the challenge of sales. The coordinator in the Triangle, on the other hand, was more involved in the advertising and media aspects of the position, and had difficulties with the sales calls. The number of sales calls to be made was very large for one person, given the list of large employers in the Triangle, and proved to be

overwhelming. The results of Triangle's first year of operation, therefore, were limited to the advertising campaign. Not a single on-site employee survey was conducted.

The coordinators were asked by the evaluator to maintain diaries, showing how they spent their time during the week, to be used in measuring the level of effort (person hours) being expended in the three regions. Categories were agreed upon, and cooperation was obtained. Each employee working on the demonstration was to maintain a diary and submit it quarterly with the progress report. Using sample periods from the diaries of the coordinators, who divided their work into several categories, the statistics in Table 2 were developed. For each diary, two days per quarter were selected at random for use in this analysis. The diaries were intended to document the person-hour allocation to activities in the region. Since the diaries were completed by the individuals, there is no control over consistency among categories, and categories were corrected where the description of the task in the diary indicated a correction was required. Although two days per quarter is a limited sample from which to infer differences, the magnitude of the differences is such that conclusions can be reached.

The data in the table illustrate the point made earlier, that Triad staff spent a high proportion of time on employer contacts. Employer contact accounted for more than twice the percentage of time in the Triad as in the Triangle. Metrolina, with a staff more similar to the Triangle's, also spent far more hours on employer contacts than the Triangle. The Triangle, with a matchmaker, devoted far more time to "matching" than the Triad, even though there were not more people to be matched. In Metrolina, the coordinator's assistant basically did marketing, and accomplished many more tasks. Matchmaking was done largely by the secretary.

TABLE 2: ANNUAL DISTRIBUTION OF ACTIVITY OF PIEDMONT CRESCENT RIDESHARING PERSONNEL (PERCENT OF PERSON-HOURS)

	Employer Contacts	Marketing	Administration	Media Contact	Matching	Evaluation	Total
Percentages							
State	11	36	47	0	6	0	100
Triangle	10	19	24	0	45	2	100
Triad	24	23	39	3	9	2	100
Metrolina	27	40	24	4	3	3	100
TOTAL	**20**	**28**	**33**	**2**	**16**	**2**	**100**
Annual Hours							
State	179	576	743	0	96	0	1595
Triangle	330	605	743	0	1416	55	3148
Triad	1183	1141	1953	151	426	96	4950
Metrolina	825	1196	715	110	83	83	3011
TOTAL	**2516**	**3520**	**4153**	**261**	**2021**	**234**	**12705**

Note: Based on a random sample of diary entries maintained by the ridesharing coordinators. The state marketing director did not maintain a diary.

The Metrolina ridesharing program experienced major institutional changes late in 1983. It was originally established in the offices of Mecklenburg County, the most populous county in the metropolitan area. The county has a close relationship with the city of Charlotte, a joint planning commission and several joint activities. In the spirit of the demonstration, and in the hopes of attracting those commuters who make long distance trips, Metrolina Rideshare expanded its scope, first to the two adjacent counties and then to the surrounding counties, extending well into rural North and South Carolina. It gave much emphasis, in the first year of the demonstration, to the Arrowood Industrial Park, which is south of Charlotte, minutes from the South Carolina border. Both the expansion and the emphasis on Arrowood upset city officials, who saw the central business district, "Uptown Charlotte," as the primary focus of activity. Metrolina Rideshare tried to respond to that criticism, and began promotional activities in Uptown. However, when the demonstration funds were depleted and local contributions were required, the city agreed to take over the program and provide local funding as a means of redirecting ridesharing efforts. That change has now taken place, and the coordinator anticipates that it will result in an increased focus on Uptown Charlotte and fewer activities for employers outside the city. However, marketing to commuters from suburban locations is expected to continue.

During this demonstration, the role of the state developed as one of coordinating agency for regional ridesharing programs, a catalyst for the exchange of ideas, and the source of most funds. All coordinators meet monthly, and regular communication is evident in all of the diaries. The state coordinator has assisted in tapping new funding sources as demonstration funds have run out. She has also been a factor in local staffing decisions, applying pressure to fill positions, training new recruits and interacting with major employers.

One important institutional aspect of this project that differs from most other demonstrations is the effectiveness of staffing in the regions. This was true in all areas of expertise, but was particularly true in the marketing element of the

program. Regional ridesharing coordination generally requires skills in sales, marketing, production of marketing tools, administration, matching (a skill combining data processing and cartography), public relations, public speaking and transportation planning/management. Regional coordinators who are skilled in all those fields are not readily available. Those whose strengths are as aggressive sales people are not likely to have the technical skills necessary to develop and produce marketing materials for use by the print and electronic media. The organization in North Carolina provided a possible solution to that problem, with state-level media expertise made available to the regional "sales" staff. Its effectiveness varied with the personnel in each region, their willingness to call upon the state marketing director, and also the availability of the state marketing director.

An important lesson to be learned from the North Carolina demonstration is the role of the institutional framework in the success of ridesharing. The Triad program was less efficient, used less specialization of labor, and spent more time on coordination and interregional communication. But the Triad coordinators were housed in the city administrations, had immediate local government support, and had significant direct contact with local employers and institutions.

The organization within each region is peculiar to the regional structure. Metrolina is typical of middle-sized urban areas, with one central city and an institutional structure centered on it. The other two regions are more unusual. The three coordinators in the Triad were closer to the major government agencies, closer to the employers, and better able to be heard than the one coordinator in the Triangle. United they can be a very strong voice, while the Triangle coordinator's voice was lost in the regional bureaucracy.

The concept of a state ridesharing program with regional components in metropolitan areas is definitely transferable. North Carolina's successful institutional framework, which used specialists at the state level to support the efforts of generalists at the regional level, can be replicated in other states.

Some of North Carolina's institutional problems can be avoided in future projects by defining the skills of the regional coordinators and state level staff.

6. PROGRAM ACTIVITIES

6.1 MARKETING AND EDUCATION PROGRAM

The three regional coordinators all believed that marketing and education programs are important, and each tried different marketing schemes. Except for a small-scale survey in the Triangle region, however, no direct efforts were made to determine the impact and effectiveness of these programs.

In the fall of 1981, Triangle conducted a media campaign. The cost of the campaign was $13,099 in NRDP special project funds. It consisted of:

- 27 thirty-second radio spots broadcast on the most popular radio station,
- 4 1/2" x 7 1/2" newspaper ads, placed in the four Sunday editions of the largest area newspapers during October. The ads were placed in the business, local news, and sports sections for maximum exposure to the 25-54 commuter age group, and
- 20 billboards (12 regular and 8 illuminated), seen by 82.4 percent of the Triangle's commuting population about 12 times a month.

To determine the effectiveness of the campaign, a small sample (350) of Triangle area residents was drawn at random from telephone directories and asked a series of questions on the following:

(1) awareness of ridesharing and Tri-A-Ride,
(2) sources of information,
(3) number of intercity commuters,
(4) employment statistics, and
(5) age and sex.

The survey was conducted twice, once in September 1981, before the media blitz, and once in November 1981, after the campaign. The results are summarized in Table 3.[1]

[1] "Triangle Area Ridesharing Public Awareness Survey", Triangle J Council of Governments, February 1982.

TABLE 3: TRI-A-RIDE MARKETING SURVEY RESULTS

	Survey I	Survey II	Change
Awareness of meaning of ridesharing	58%	67%	+ 9%
Awareness of Tri-A-Ride	19%	22%	+ 3%
Source of Information (for those aware of Tri-A-Ride)			
Newspaper	7%	5%	- 2%
Radio	5%	8%	+ 3%
Billboard	5%	35%	+30%
Roadside Sign	29%	32%	+ 3%
Television	0%	7%	+ 7%
Poster	2%	2%	+ 0%
Family, Friend, Co-worker	40%	8%	-32%
Other	12%	3%	- 9%
Employment Status			
Employed within city	31%	19%	-12%
Employed in another city	31%	39%	+ 8%
Unemployed	38%	42%	+ 4%
Sex			
Female	64%	64%	--
Male	36%	36%	--

The survey showed an increase from 19 percent to 22 percent in random telephone respondents aware of the Tri-A-Ride program, based on the campaign. This small untargeted increase, compared with the many thousands of potential ridesharers who were presumed to become aware during a matching program at one of the larger employers, explains why most coordinators felt matching programs were more worthwhile and placed most of their time and emphasis on employer contacts.

Based on this survey, Tri-A-Ride concluded that billboards were an effective means of increasing awareness, and that the most valuable awareness technique was use of roadside signs, which are far less expensive, fairly permanent, and visible to the same audience as billboards. It should be noted that this survey measured awareness, not participation in ridesharing, the goal of Tri-A-Ride.

Tri-A-Ride later documented $95,000 in free public service advertising, much of which was donated by the same vendors from which it had purchased advertising during the paid campaign.

As an additional factor in the Tri-A-Ride campaign, considerable time and money were spent designing and developing graphics. Tri-A-Ride devoted a large share of available resources to the graphics (including billboards, ads, posters, stationery, etc). The results were among the highest quality graphics produced in the demonstration. The other programs also produced posters, newsletters, displays, road signs, public service announcements, packets, etc. However, no documentation of the effect of these measures exists.

The Metrolina program instituted a major marketing campaign in the Arrowood Industrial Park, a large employment concentration with several small and mid-size industries. Costs for this campaign cannot be gauged because they were not separately recorded. The program arranged publicity, solicited prizes and awarded frozen turkeys to the employees who could best go "cold turkey" on driving alone. Considerable media attention was attracted to the turkey-costumed volunteer checking auto occupancy at the park entrance. There was also great success in obtaining cooperation from Arrowood employers in surveying their

employees, although fear of union organizing made them refuse to include these employees in a computerized data base. Vehicle occupancy counts were done, before and after, to measure effectiveness. The results, unfortunately, were negative, despite textbook application of marketing techniques. The promotion occurred during the peak of the oil glut, when gasoline prices were dropping and employment also declined.

The state also provided marketing support, including a newsletter, slide presentation, poster series, vanpool information, and, most notably, a film produced at a cost of $13,500 as a public service by R.J. Reynolds Tobacco Co. to promote vanpooling. The state contributed the time of the state marketing director in developing this film, but all other costs were paid by Reynolds. The film has won awards from the international ridesharing community, has been very popular in North Carolina, and has produced positive responses from employers and employees. Its popularity was a factor in R.J. Reynolds' receipt of the 1982 Federal Highway Administrator's Ridesharing Award. Based on the difficulty in obtaining a copy of the film, it is indeed popular.

The state marketing program was largely independent of the regional programs. The state marketing director was described as extremely creative and independent. However, her marketing activities were not coordinated with the regions, were not necessarily complementary, and consumed so much of her time that she was not available to provide the expertise the regional coordinators needed. She was so involved in the Reynolds film she had little time to develop the public service announcements and posters. These materials, particularly the posters, were ultimately rejected by the regional coordinators as inadequate for their needs. Their dissatisfaction led to the creation of a marketing fund at the state level, using NRDP funds, to be drawn upon by the regional coordinators. This pool of funds, with minimal red tape and with state expertise behind it, was heavily used by the regional coordinators for brochures, posters, radio ads and displays.

All of the regional coordinators and the state coordinator spent time and energy on public education and awareness. Newspaper articles, television specials, radio talk shows, and presentations to civic groups were noted regularly in the quarterly progress reports. The effectiveness of these activities has not been measured, and cannot, therefore, be evaluated.

The techniques used here--media campaigns, posters, billboards, graphics, etc.--are not unusual, and have all been used elsewhere before. If the prerequisite economic incentives to rideshare exist, marketing of ridesharing programs can have positive results, and popular marketing techniques used for other products can be applied to it. North Carolina experimented with a spectrum of marketing strategies and appears to have been successful in those situations where ridesharing potential existed and promotion and information were the primary missing elements. The negative results of the clever and well-executed Arrowood Industrial Park campaign demonstrates that even the best promotional techniques will not succeed in the absence of economic incentives.

6.2 EMPLOYER CONTACTS

Employer contacts, as shown in Table 2, consumed about 2,500 person-hours of coordinators' time per year during the demonstration, or about 20 percent of their time. It varied from 10 percent in the Triangle to 27 percent in Metrolina. The number of employers contacted, as estimated from the quarterly employer contact reports submitted by the coordinators, is shown in Table 4. Each call to an employer is considered a contact, whether initial or follow-up. These data do not provide any information on employer satisfaction with the contact, or change in employer attitude toward ridesharing.

Most employer contacts resulted in permission to perform matching, the single activity that permitted the coordinators to participate actively in the development of carpools. The success of employer contacts can be inferred from the number of

TABLE 4: EMPLOYER CONTACTS AS REPORTED BY RIDESHARING COORDINATORS

	2nd Quarter 1981	3rd Quarter 1981	4th Quarter 1981
Triangle	1	1	18
Metrolina	52	71	7
Triad	21	48	40
Total	74	120	65

	1st Quarter 1982	2nd Quarter 1982	Total
Triangle	19	18	57
Metrolina	21	15	166
Triad	217	63	389
Total	257	96	612

requests for matching services, as shown on Table 5. The intensive employer contact program in the Triad was the major source of matching requests. The program in Metrolina had similar success. The Triangle, with fewer employer contacts, had a lower level of activity.

North Carolina employers have a peculiar, although not unique, fear of unionization that pervades their dealings with any institution proposing to contact their employees. Some employer attitudes are listed below:

- Any list of employee names and addresses can be used to initiate union or grouping contacts.
- Any benefit provided to employees can be used as a bargaining tool or become an irrevocable precedent.
- Outsiders in the plant are suspect.
- Ridesharing can lead to employees getting to know each other and having the opportunity, on the journey to work, to compare conditions and organize unions.

This fear has led to resistance to ridesharing and required substantial modification of the coordinator's approach, especially in Metrolina. Employers usually insist that all matching be done manually, in house, with no gridding data or results available to the coordinator. Employers express an unwillingness to cooperate, and skepticism regarding the benefits of the program. Thus, the successes in employer participation in the Piedmont Crescent have been achieved over the additional handicap of fear of unions.

6.3 MATCHING ACTIVITIES

Since the evaluation process began, data have been collected on a regular basis in most of the ridesharing offices in the Piedmont Crescent to monitor the level of matching activity. These data are summarized in Table 5 and Figure 2. The numbers represent only absolute magnitude. There is no information on how many of the callers are repeat requests, how many of those

TABLE 5: RECORDED ACTIVITY

Piedmont Crescent Ridesharing

	2nd Quarter 1981		3rd Quarter 1981		4th Quarter 1981	
	Total	Intercity	Total	Intercity	Total	Intercity
COMMUTER REQUESTS FOR MATCHES	**3697**	**439**	**5566**	**3839**	**2055**	**687**
Triangle	500	348	1317	658	457	404
Metrolina	1435		259		264	
Triad						
Greensboro	229	91	2923	2916	357	218
Winston-Salem	4				1069	
High Point	1529		1062	265	172	65
COMMUTER SURVEYS PROCESSED	**1852**		**5423**		**1407**	
Triangle	496		1317		482	
Metrolina	247		259		157	
Triad						
Greensboro	201		2887		256	
Winston-Salem					497	
High Point	908		1062		172	
COMMUTERS MATCHED	**827**	**386**	**5298**	**3824**	**1165**	**471**
Triangle	358	217	1209	599	371	337
Metrolina	133	76	160	98	144	73
Triad						
Greensboro	128	41	2887	2887	223	134
Winston-Salem					497	
High Point	208	52	1058	265	74	

TABLE 5 (Continued)

	1st Quarter 1982		2nd Quarter 1982		5 Quarters	
	Total	Intercity	Total	Intercity	Total	Intercity
COMMUTER REQUESTS FOR MATCHES	**1618**	**536**	**4575**	**1826**	**17511**	**7327**
Triangle	271	232	3305	1555	5850	3197
Metrolina	832		686		3476	
Triad						
Greensboro	515	304	584	271	4608	3800
Winston-Salem					1073	
High Point					2763	330
COMMUTER SURVEYS PROCESSED	**1505**		**4115**		**14302**	
Triangle	271		3020		5586	
Metrolina	832		588		2083	
Triad						
Greensboro	402		507		4253	
Winston-Salem					497	
High Point					2142	
COMMUTERS MATCHED	**1218**	**744**	**3739**	**1817**	**12247**	**7242**
Triangle	230	200	3020	1490	5188	2843
Metrolina	633	340	285	120	1355	707
Triad						
Greensboro	355	204	434	207	4027	3473
Winston-Salem					497	
High Point					1340	317

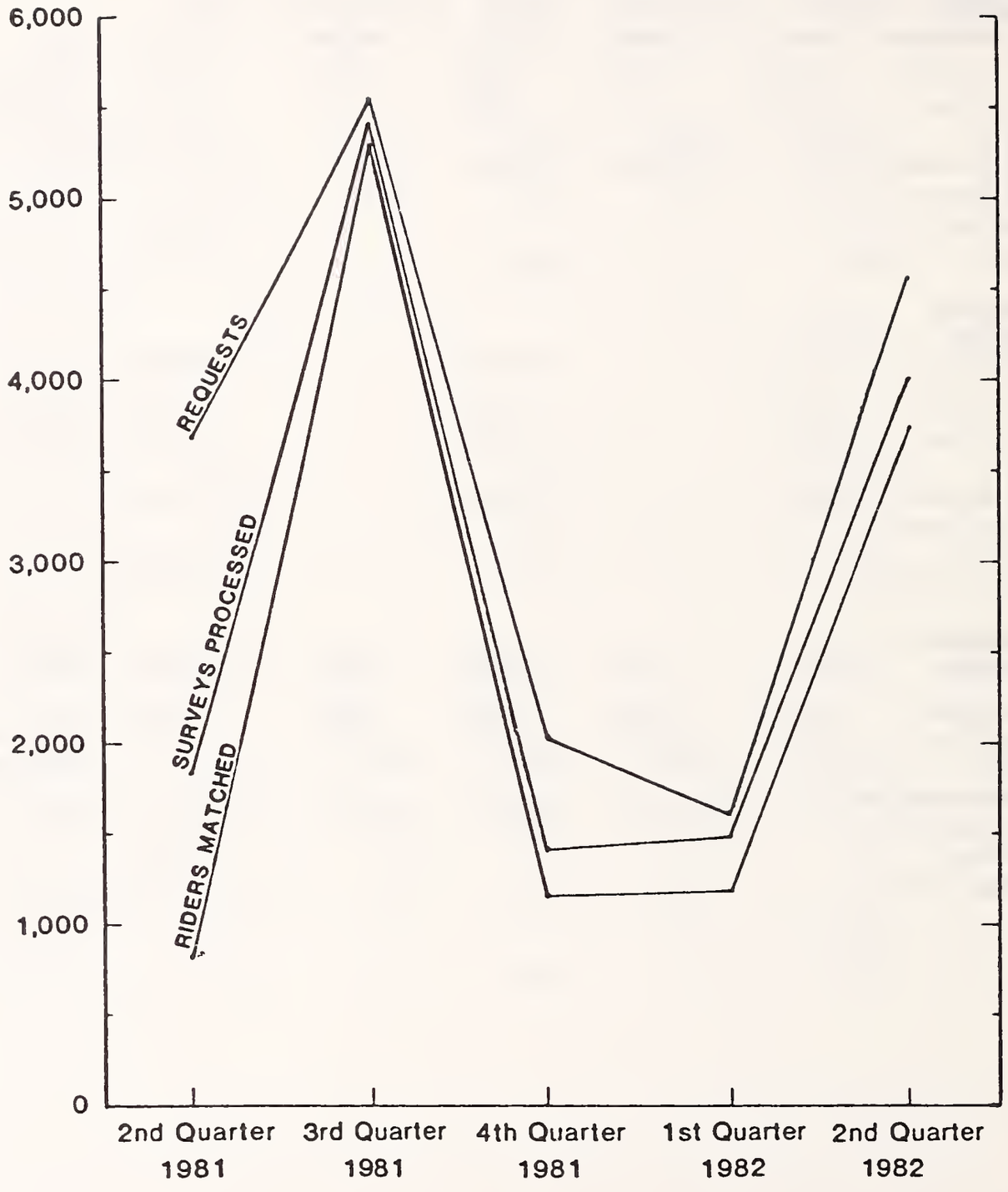

FIGURE 2

Recorded Activity-Piedmont Crescrent Ridesharing

matched actually joined carpools, or how long they remained in them. Staffing changes at several of the projects have also created gaps in the available data.

The variety of promotional activities fueled by the demonstration, from employer contacts to television announcements, generated a level of matching activity that kept most of the coordinators continuously busy. Major employee matching surveys often resulted in hundreds of written requests in a single day.

As Figure 2 illustrates, the recording of activity has been very erratic. This is due to a number of factors:

1. Matched people are those notified of a match, with no data on how well they followed up the notice. Research in other cities shows that about 3 to 15 percent of the people notified of a match actually begin to rideshare.[1]

2. Not all major matches are recorded. In several major industry matches, especially in Metrolina, the records were not entered into the computerized data base (due to employers' fear that the data might be used for union organizing), and they are not shown in Table 5 and Figure 2.

3. Several large projects got underway in the second quarter of 1982 and do not appear on this chart. The Triangle program began surveys at major universities and hospitals in the region, which were not complete by July 1, 1982.

4. Major matching activities have caused unevenness in the record. Greensboro, for example, received all the requests from the student body at Guilford Technical Institute in one day, adding 2,887 requests to a daily total that generally hovers around 20-30.

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[1] 3% in Portland, 7.5% in Seattle, 9% in Cincinnati, 15% in Houston, from NRDP data.

5. Not all ridesharing coordinators have faithfully recorded activity. The staff changes in Winston-Salem and High Point left several gaps in the data, as shown in Table 5.

6. These data represent coordinator reports, and were not verified in any other way.

Despite these caveats, it is probable that the presence of ridesharing coordinators and the devotion of hours of their time to marketing and matching has led to the formation of many new pools. Commuters were reached through road signs, billboards, radio and television spots, interview shows, and especially direct contact with their employers, as described previously.

The success of the matching was the result of the people involved and their ability to "sell" ridesharing. The coordinators who viewed themselves as salesmen and used sales techniques had greater success than those who had a public service orientation.

6.4 PARK-AND-RIDE LOTS

Park-and-ride was one of the rideshare activities funded by the special project funds described previously, to simplify carpooling, and provide off-street parking as carpool rendezvous points. The regions that developed park-and-ride lots in North Carolina, especially Metrolina and Winston-Salem, had great success with the lots as ridesharing strategies. These projects were also successful in reorienting the State DOT thinking on the role of park-and-ride lots in highway planning and construction. Staff, by touring, identified potential lots, then determined ownership, contacted owners, and requested permission to use the lots as public parking. The State Department of Transportation then posted signs which included the carpool phone number and were judged to be good, permanent publicity for the ridesharing program. About $13,000 was spent on the program in Winston-Salem and Metrolina, excluding the cost of signs (borne by the State DOT). Metrolina performed a specific study of park-and-ride lots

related to day care centers. Day care centers, where working parents leave their children, were identified, and park-and-ride lots were established in locations convenient to these centers. A special marketing effort was then carried out at the centers to try to match parents. Although there had been few successful matches by the end of the demonstration, the program was continuing.

Metrolina recently evaluated the impact of the park-and-ride lots established with National Ridesharing Demonstration funds. A $2,200 budget was expended in establishing a network of forty-six lots over 11 counties in North and South Carolina. These lots were located at churches, shopping centers, and adjacent to state rights-of-way. Signs were installed at 29 of the lots, including both a highway sign identifying the lot and reserved parking signs at some spaces. In the summer of 1982, a postcard questionnaire was distributed at all of the 41 lots in North Carolina. One hundred fifty-seven cards were distributed, and 39 returned. The major results were:

- 49 percent traveled 6 or more miles to the lot.
- 69 percent traveled 21 or more additional miles to work.
- 13 percent were 2 person carpools
  36 percent were 3 person carpools
  28 percent were 4 person carpools
  18 percent were 5 or more person carpools
- Only 18 percent had received printouts from Metrolina Rideshare.
- Word of mouth was the most effective publicity for the lots.

The participating regions regarded park-and-ride lots, particularly those established on "borrowed" land, as an inexpensive long term way to increase awareness of ridesharing, to eliminate a major obstacle to carpool formation (the circuity of door-to-door pooling), to provide facilities useful for a variety of trips, and to provide a permanent daily reminder to commuters of the advantages of ridesharing -- "You could stop driving here if you were in a carpool." Extensive use of summer interns on the park-and-ride lot projects lowered the staff expense and avoided conflicts with existing permanent staff assignments.

North Carolina spent some effort on analyzing and revising the state law to simplify the process of establishing public use parking lots and to eliminate high liability concerns. Many of the potential park-and-ride lot owners were concerned that use of that lot would expose them to lawsuits resulting from accidents or vehicle damage. One of the state interns researched the issue and prepared a report that led to a change in the law. After the law revision, acceptance was far easier to achieve.

7. RELATIONSHIP TO PUBLIC TRANSPORTATION

All of the cities involved in ridesharing in the Piedmont Crescent have publicly owned and operated bus transit systems. None carries a large share of trips. All operate mainly as services for those who have no alternative. Ridesharing and transit, therefore, were not viewed as competing systems by either the transit operators or the ridesharing coordinators, so there was good cooperation.

In Metrolina, in the development of the Charlotte-Mecklenburg County Transportation Action Plan,[2] ridesharing, including vanpooling, was included as a major element in the plan. With the help and encouragement of Metrolina Rideshare, ridesharing scenarios were developed for all plan alternatives. Park-and-ride lot planning was coordinated with the local transit system as well. As a result of the demonstration, the transit agency in Charlotte has recognized ridesharing as a complementary service.

In the Triad, Winston-Salem's ridesharing coordinator is headquartered in the transit agency, and has, as part of her job, also developed marketing materials for new express bus service. Winston-Salem is also the home of R.J. Reynolds, which currently has 44 vanpools in operation to its world headquarters and downtown offices. Vanpooling of this magnitude has the effect of displacing bus service, but it has not been discouraged for that reason. Other major employment concentrations have also been encouraged by the coordinators to develop vanpooling but not new bus service, especially for non-CBD concentrations, like the schools and industrial parks.

In Greensboro, where the transit service is provided by the utility company, the ridesharing coordinator, who works for the city, has also been a transit promoter, performing the marketing for the downtown shuttle and promoting transit in ridesharing materials. He also develops promotional material for suburban charter bus operations. Neither of these is a major effort.

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[2] **Transportation Action Plan, Choices for the 80's**, Charlotte-Mecklenburg Planning Commission and Charlotte Department of Transportation, 1981.

8. PROJECT COSTS

Table 6 summarizes the sources and disposition of funds for ridesharing activities during this demonstration. Most of the costs cannot be allocated to elements of the demonstration, since bookkeeping was not done by element. The exceptions are the activities funded as special projects, the separate funding program, using NRDP funds, made available by the state. Both Metrolina and Winston-Salem used special project funds for park-and-ride lot development, Metrolina and Triangle used them for media expenditures, and Metrolina developed software for the city's micro-computer for Vehicle Occupancy Rate calculations.

The project expenditures exceeded $400,000, including $76,000 in funds from Section 5 of the Urban Mass Transportation Act, $78,000 in funds from the Federal Highway Administration's Federal Aid Urban System (FAUS) funds, and $88,000 in funds from Section 126 of the Federal Aid Highway Act. National Ridesharing Demonstration funds included $132,000 in support to the North Carolina Department of Transportation and $31,000 in Special Project Funds, as described in Table 6.

TABLE 6: SUMMARY OF EXPENDITURES

	Section 5			
	City of High Point	Triangle	City of Winston-Salem	Subtotal
Personnel Costs	$24,843.40	0	$15,931.09	$39,774.49
Fringe Benefits	3,623.36	0	2,414.04	6,037.40
Travel	701.12	0	649.15	1,350.27
Equipment	0	0	0	0
Materials	374.39	0	1,035.73	1,410.12
Printing	1,073.81	0	2,593.46	3,667.27
Computer Services	76.50	0	255.28	331.78
Indirect Charges	0	0	0	0
Contractual Services	0	$22,992.93	0	22,992.93
Temporary Help	0	0	0	0
Other	570.13	0	0	570.13
Total Expenditures	**$30,262.31**	**$22,992.93**	**$22,878.75**	**$76,134.39**

TABLE 6. SUMMARY OF EXPENDITURES (Continued)

	FAUS				126 Funds	
	City of Greensboro	City of Winston-Salem	Triangle J COG	Subtotal	Mecklenburg County	Subtotal
Personnel Costs	$24,856.00	$3,416.58	$14,901.11	$43,173.69	$61,338.41	$61,338.41
Fringe Benefits	3,719.40	520.31	2,610.36	6,850.07	8,908.71	8,908.71
Travel	1,786.35	1,786.35	337.55	2,123.90	1,799.14	1,799.14
Equipment	0	0	3,213.99	3,213.99	681.00	681.00
Materials	2,048.28	0	0	2,048.28	2,672.88	2,672.88
Printing	1,202.31	0	822.53	2,024.84	2,816.51	2,816.51
Computer Services	891.18	0	2,652.47	3,543.65	3,436.00	3,436.00
Indirect Charges	0	0	12,478.03	12,478.03	5,458.00	5,458.00
Contractual Services	461.03	0	0	461.03	0	0
Temporary Help	0	0	0	0	0	0
Other	0	0	2,176.26	2,176.26	1,118.35	1,118.35
Total Expenditures	**$34,964.55**	**$3,936.89**	**$39,192.30**	**$78,093.74**	**$88,229.00**	**$88,229.00**

TABLE 6. SUMMARY OF EXPENDITURES (Continued)

	NRDP Special Projects				
	Mecklenburg County[1]	Mecklenburg County[2]	City of Winston-Salem[3]	Triangle J COG[4]	Mecklenburg County[5]
Personnel Costs	$2,131.50	0	$5,095.64	$422.63	$2,300.00
Fringe Benefits	144.68	0	782.54	0	208.34
Travel	671.00	0	5.50	0	110.00
Equipment	0	0	0	0	0
Materials	18.00	0	12.96	0	20.00
Printing	0	0	156.54	659.81	0
Computer Services	0	0	0	0	0
Indirect Charges	253.65	0	0	0	320.00
Contractual Services	0	$3,000.00	0	9,882.98	0
Temporary Help	0	0	0	565.36	0
Other	0	0	0	1,569.00	0
Total Expenditures	**$3,218.83**	**$3,000.00**	**$6,053.18**	**$13,099.78**	**$2,958.34**

Special Projects' Descriptions:

[1]To research, develop and secure a system of regional park-and-ride lots.

[2]A company/design firm which specializes in participatory displays will be hired to develop and construct a display for the RideShare Program to use at fairs, community celebrations, special events and during company surveys.

[3]To increase the availability of park-and-ride lots on privately-owned land.

[4]A two-phase effort to expand and enhance advertising for Triangle Area Ride-sharing.

[5]To hire a summer intern to coordinate and promote carpool matching activities at 7 daycare clusters. Commuters were matched from centrally-located park-and-ride lots.

TABLE 6. SUMMARY OF EXPENDITURES (Continued)

	NRDP Special Projects		NRD Program Support Funds		
	Mecklenburg County[6]	Subtotal	NCDOT	Subtotal	Grand Total
Personnel Costs	$2,404.96	$12,354.73	$47,825.14	$47,825.14	$204,446.46
Fringe Benefits	164.45	1,300.01	28,259.13	28,259.13	51,355.32
Travel	0	786.50	3,172.22	3,172.22	9,232.03
Equipment	0	0	0	0	3,894.99
Materials	113.03	161.99	8,724.46	8,724.46	15,017.73
Printing	0	816.35	26,972.36	26,972.36	36,297.33
Computer Services	0	0	15,540.90	15,540.90	22,852.33
Indirect Charges	320.00	893.65	0	0	18,829.68
Contractual Services	0	12,882.98	637.44	637.44	36,974.38
Temporary Help	0	565.36	0	0	565.36
Other	0	1,569.00	1,322.26	1,322.26	6,756.00
Total Expenditures	**$3,000.44**	**$31,330.57**	**$132,453.91**	**$132,453.91**	**$406,241.61**

Special Projects' Descriptions:

[6]To research and develop the software and/or special program to do Vehicle Occupancy Rate (VOR) calculations.

9. CONCLUSIONS AND TRANSFERABILITY

The North Carolina Case Study was intended to demonstrate the organization and operation of ridesharing programs in a complex multi-centered region. The demonstration fulfilled many of its goals, and provided the ridesharing community with a laboratory to test a variety of ideas. Many of these ideas worked well, including:

1. **A coordinated, state-managed program with cooperation among regional coordinators.** The ridesharing community in North Carolina is close knit and mutually supportive, as evidenced by regular communication, sharing of ideas, and frequent use of individuals' special skills.

2. **Regional orientation of the ridesharing coordinators.** The Metrolina and Triangle programs are clearly regional in scope, and the Triad is moving in that direction. The Greensboro and Winston-Salem coordinators in the Triad have an agenda that includes merger. The reorganization in Metrolina, moving the program from the county to the city, was a setback, as it narrowed the scope of a regional program.

3. **Successful park-and-ride programs.** As a result of the demonstration, park-and-ride lots have been established throughout the Metrolina region, and in Greensboro and Winston-Salem in the Triad region. The state developed legislation and initiated uniform signing of lots. The lots are used by carpoolers and the signing is an important source of ridesharing awareness. The State Department of Transportation has accepted park-and-ride lots as an integral part of highway planning and design.

4. **Statewide marketing coordination.** Successes here include the vanpool movie and poster campaigns, and an expeditious and effective marketing funding program.

The major failure here was that the assistance and expertise provided by the state for the local marketing programs were not well targeted to their needs.

Problems were encountered in other areas as well. The Triangle program was inadequately staffed, compared to the other two, with fewer than three full-time people. The allocation of funding from the demonstration, with its time limitation, was not conducive to long-term staff commitments in several areas, especially Winston-Salem. The failure to define service areas and methods for handling overlaps resulted in some uncoordinated marketing and concern for territory. Computer services provided by the state became more of an obstacle than a solution, because of availability problems with the state computer.

The most important lesson to be learned from the North Carolina demonstration is the role of the institutional framework in the success of ridesharing. The Triad program was less efficient, used less specialization of labor, and spent more time on coordination and intraregional communication. But the Triad coordinators were housed in city administrations, had immediate local government support, and had more direct contact with local employers and institutions than did the Triangle coordinator.

Another lesson, expressed by the coordinators themselves, was the importance of "sales" training and orientation. Large employers are used to dealing with sales people. They know how to respond and communicate with them. Government administrators do not have the same approach and have a harder time developing relationships with large employers.

The various marketing media used had mixed results. None of them was unusual, and, aside from the Triangle campaign, their impact was not documented. When the prerequisite economic incentives exist, marketing of ridesharing programs using marketing techniques developed for other products can be effective.

The concept of a state ridesharing program with regional components in metropolitan areas is definitely transferable to other states. This effective institutional scheme combines generalists at the regional level, whose primary expertise is

sales, with specialists at the state level whose expertise is in the production of marketing materials, administration, and intergovernmental relations.

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